

Serial No. 10/539,768  
Amdt. dated November 12, 2008  
Reply to Office Action of July 17, 2008

Docket No. **HI-0185**

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A web content converting system for converting a large display screen web document into a small display screen web document, the system comprising:
  - a preprocessor that standardizes a non-standard web document having an erroneous tag to output a standardized web document in a data format suitable for analysis;
  - a client profile analyzer that extracts ~~from the web document~~ and analyzes client display device information;
  - a structure analyzer that receives and analyzes the web document standardized in the preprocessor to sort the web document to a content unit piece according to a document analysis algorithm;
  - an image converter that extracts information on an image encoding/decoding procedure and an image size of the web document, in order to display the image;
  - a component block extractor that groups each of the content unit pieces with similar groups of content unit pieces within a range not exceeding a maximal width by using an attribution value of the respective content unit piece and client display device performance information, to generate component blocks;

a component block categorizer that categorizes each of the component blocks generated by the component block extractor as either index or body content portions in accordance with a content characteristic;

an index generator that extracts information on an image or text index from the component blocks categorized as index content portions, and generates a script file and an additional tag collection to express the extracted information;

an auditory generator that converts a text-centered body content block into an auditory language to perform an auditory supporting function; and

a HyperText Markup Language (HTML) generator that generates, rearranges, and reconstructs content object elements according to a document pattern to generate a small display screen web document.

2. (Original) The web content converting system of claim 1, wherein the web content converting system is installed at any one of three layers of a web server, a client and a proxy.

3. (Currently Amended) A web content converting method for converting a large display screen web document into a small display screen web document, the method comprising:  
standardizing a non-standard web document including an erroneous tag to output

a standardized web document in a data format suitable for analysis;

analyzing a tag according to a document analysis algorithm to set the web document into content unit pieces;

grouping each of the content unit pieces with similar groups of content unit pieces within a range not exceeding a maximal width by using an attribution value of the respective content unit piece and client display device performance information, to generate component blocks;

categorizing each of the generated component blocks as either index or body content portions in accordance with a content characteristic;

extracting information on an image or text index from the component blocks categorized as index content portions, and generating a script file and an additional tag collection to express the extracted information;

converting a text-centered body content block into an auditory markup language to perform an auditory supporting function; and

generating, rearranging, and reconstructing content object elements according to a document pattern to generate a small display screen web document.

4. (Currently Amended) The web content converting method of claim 3, wherein in the ~~standardizing~~ analyzing step, a tag comprising one of <TABLE>, <TR>, <TD>, or

<IMG> is mainly analyzed, and a specific <TD> tag is defined as a component to be used as a minimal unit for the content unit analysis and the component constructs a visual categorization layout.

5. (Previously Presented) The web content converting method of claim 3, wherein in the grouping step, a component tree is input to check initial width information for all component nodes, and the step further comprises checking whether or not a sibling node of a current component node exists, and if a sibling node of a current component node exists, similar sibling nodes are bundled and grouped within a range not exceeding the maximal width (MAX\_WIDTH).

6. (Previously Presented) The web content converting method of claim 3, wherein the categorizing step comprises:

receiving a component block tree for each of the component blocks while comparing a content pattern of the component blocks;

determining an index type if a resultant value of the pattern comparison exceeds a certain critical value;

setting a type of the index-determined block to each of an image index (INDEX\_I) or a text index (INDEX\_T) depending on whether a data type of the content is an

image or a text; and

categorizing a content block which is not an index portion as a body content portion, and categorizing an auditory body (BODY\_V) to perform the converting into the auditory document and a general body (BODY\_G) processed as other general content blocks.

7. (Previously Presented) The web content converting system of claim 1, wherein the auditory markup generator comprises a voice markup generator that converts a text-centered body content block into a voice markup language to perform a voice supporting function.

8. (Previously Presented) The web content converting method of claim 1, wherein converting a text-centered body content block into an auditory markup language to perform an auditory supporting function comprises converting a text-centered body content block into a voice markup language to perform a voice supporting function.

9. (Previously Presented) In a portable terminal for receiving contents from a network web server, a portable terminal comprising:

a network interface configured to access the web server via the network; and

a web contents transcoding system configured to process contents provided by the web server for a first display performance to a second reduced display performance according to

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identified unit pieces of the transmitted contents, wherein the web contents transcoding system performs grouping of each of content unit pieces of the contents with similar groups of content unit pieces within a range not exceeding a maximal width by using an attribution value of the respective content unit piece and client performance information, to generate component blocks and categorizes each of the component blocks generate by the component block extractor as either index or body content portions in accordance with a content characteristic.

10. (Currently Amended) In a portable terminal for receiving contents from a network web server, a user terminal comprising:

a web content transcoding system processor configured to process the contents transmitted by the web server for a first display performance to a second reduced display performance of a portable terminal according to identified unit pieces of the transmitted contents, wherein the web content transcoding system processor performs grouping of each of the content unit pieces of the contents with similar groups of content unit pieces within a range not exceeding a maximal width by using an attribution value of the respective content unit piece and client display device performance information, to generate component blocks and categorize each of the component blocks generated by the component block extractor as either index or body content portions in accordance with a content characteristic; and

a communication port configured to transmit the processed contents to the portable terminal.

11. (Currently Amended) The terminal of claim 10, wherein the web contents transcoding system comprises:

a first processor configured to standardize a web document;

a second processor that receives the standardized web document and determines a plurality of content unit pieces in accordance with a layout of the standardized web document;

a third processor configured to transcode the content unit pieces by grouping corresponding content unit pieces into component blocks according to characteristics of a client display device performance and the attribution value of each content unit piece and categorize each component block into the identifier and data portions depending on the characteristic of the content; and

a fourth processor configured to rearrange and reconstruct categorized object elements according to a document pattern to generate a customized web document.

12. (Currently Amended) A method, comprising:

receiving a first web document;

determining a plurality of content unit pieces of the web document;

grouping the plurality of content unit pieces based on client display device information and information of the grouped content unit pieces; and

generating a second rearranged web document according to the grouped content unit pieces, wherein the generating further comprises:

categorizing the grouped content unit pieces into one of an index and body content; and

extracting the grouped content unit pieces in accordance with the categorized index and body content.

13. (Previously Presented) The method of claim 12, wherein the determining comprises analyzing structural tag information of the first web document.

14. (Currently Amended) The method of claim 12, wherein the grouping comprises selecting each content unit piece in a range not exceeding a width of a single screen based on said client display device information.

15. (Previously Presented) The method of claim 12, wherein the second rearranged web document is displayed without a scroll bar for a width direction.



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16. (Canceled)
17. (Previously Presented) The method of claim 12, wherein the extracting comprises:  
determining a type of a categorized index as a text index or an image index; and  
determining a type of a body content as a first document or a voice supportable  
document.